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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/501,482	08/16/2004	Bjorn Paulshus	4566-0107PUS1	2371
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BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EXAMINER MILLS, DANIEL J	
			ART UNIT	PAPER NUMBER

3679

DATE MAILED: 10/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

*ku*

**Office Action Summary**

Application No.

10/501,482

Applicant(s)

PAULSHUS, BJORN

Examiner

Daniel J. Mills

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 7/14/2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Specification***

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

#### **Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or  
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (f) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, the word "like" renders the claim indefinite because it is unclear whether the limitations following the word are part of the claimed invention. See MPEP § 2173.05(d).

Regarding claim 8, the phrase "between the embracing element and the receiving body the strands extend less radial restriction and in a substantially natural direction towards and into the apertures of the receiving body" is unclear.

Regarding claim 9, the phrase "the receiving body acts as a gathering element for the strands between the embracing element and the terminating sleeve" it is unclear how the receiving body acts between itself and another element.

Regarding claim 14, it is unclear what the phrases "radially outer surface" and "radially inner surface" mean.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daiguji et al. (Daiguji – US 2001/0039686) in view of Willes (GB 2,091,770) and Shigley & Mischke (5<sup>th</sup> edition).

Regarding claim 1, Daiguji discloses an end termination means for tension legs (figure 2), which tension leg is constructed a number strands (4) that constitute the load carrying elements of the tension leg which strands and each strand is in turn constructed of a plurality of rods (see paragraph 0028) where the rods are twisted about each other like in a wire rope (twisted wire), and the strands terminate near a receiving body (2') having connecting means and a number through-going apertures enclosing the respective strands, characterized in that each strand is passed through respective aperture in the receiving body (2') without being fixed therein, that each strand has a free end terminating some distance above the receiving body (see figure 8), and that the free end of each strand is fixed to and enclosed by a terminating sleeve (5) having a diameter larger than a corresponding aperture in the receiving body, which terminating sleeve is loosely resting on abutting the receiving body.

Daiguji fails to disclose that the rods are composed of non-metallic materials like composite material with embedded strength fibers are twisted (laid) about the longitudinal axis of the tension leg by a predetermined laying length.

Willes (GB 2,091,770) teaches the use of a composite fiber strand rope and internally tapered end termination because the combination of the high-modulus plastic

fiber rope and end termination is able to withstand high tensile loading forces with low weight. Application of well known materials in an obvious application is a simple matter of design choice. Accordingly it would have been obvious at the time of applicant's invention to modify the arrangement of Daiguji to include a composite rope and end termination as taught by Willes for the purpose of utilizing strong light composite plastic fiber rope that minimizes weight and maximizes load carrying capacity.

Shigley & Mischke (S-M) teaches the use of a Lang-lay pattern for resistance to abrasive wear and fatigue failure. Accordingly it would have been obvious at the time of applicant's invention to modify the arrangement of Daiguji in view of Willes to include a Lang-lay pattern for resistance to abrasive wear and fatigue failure.

Regarding claim 2, Daiguji in view of Willes and S-M disclose an end termination means characterized in that the terminating sleeve (Willes ) is internally tapered in a direction towards the receiving body (toward the body of the strand as shown in Willes).

Regarding claim 3, Daiguji in view of Willes and S-M disclose an end termination means characterized in that a guiding sleeve (the curved portions at the ends of holes 6 are guides for the strands) is arranged within each aperture of the receiving body.

Regarding claim 4, Daiguji in view of Willes and S-M disclose an end termination characterized in that the guiding sleeve (the curved area at the ends of the holes) is shorter than the length of the aperture of the receiving body.

Regarding claim 5, Daiguji in view of Willes and S-M disclose an end termination characterized in that the guiding sleeve is arranged within the aperture (6) close to the entrance of the strands (4) into the receiving body (from the base of the receiving body).

Regarding claim 8, Daiguji in view of Willes and S-M disclose an end termination comprises an embracing element (see figure 2, the embracing element guides the strands more closely together) that is spaced apart from the receiving body and keeps the strands together, that between the embracing element and the receiving body the strands extend less radial restriction and in a substantially natural direction towards and into the apertures of the receiving body (as shown in figure 2).

Regarding claim 9, Daiguji in view of Willes and S-M disclose an end termination characterized in that the receiving body acts as a gathering element for the strands between the embracing element and the terminating sleeve (see figure 2).

Regarding claim 10, Daiguji in view of Willes and S-M disclose an end termination characterized in that the apertures of the receiving body are somewhat inclined relative to the longitudinal axis of the tension leg (shown in figure 8) and the inclination corresponds to the natural direction of the strands between the embracing element and the terminating sleeves.

Regarding claim 11, Daiguji in view of Willes and S-M disclose an end termination characterized in that the end to a termination comprises an external rigid sleeve (1) fixed at one end thereof to the receiving body and in its other end to the embracing element.

Claims 12, 13, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daiguji et al. (Daiguji – US 2001/0039686) in view of Willes (GB 2,091,770) and Shigley & Mischke (5<sup>th</sup> edition) as set forth in claims 1-5, 8-11, above, and further in view of Dufosse (US 3,967,421).

Regarding claim 12, Daiguji in view of Willes and S-M disclose an end termination as claimed but fail to disclose that the receiving body on its external surface has at least one annular groove for engagement with at least one first annular rib on a connecting part that is connected to a connecting point.

Dufossez teaches the use of a receiving body (6) that on its external surface has at least one annular groove (threading) for engagement with at least one first annular rib (threading on 8) on a connecting part (8) that is connected to a connecting point (at 9), for the purpose of allowing an adjustment of length of the end termination to adjust tension in the cable. Accordingly it would have been obvious at the time of applicant's invention, to modify the arrangement of Daiguji in view of Willes and S-M to include a receiving body that on its external surface has at least one annular groove for engagement with at least one first annular rib on a connecting part that is connected to a connecting point as taught by Dufossez for the purpose of allowing an adjustment of end termination length.

Regarding claim 13, Daiguji in view of Willes, S-M and Dufossez disclose an end termination characterized in that the connecting point (at 9, Dufossez) has at least one external annular groove (threading on 8, Dufossez) for engagement with at least one second annular rib (on 9, Dufossez) arranged on the connecting part a distance apart from the at least one first rib (at the connection of 8 and 6, Dufossez), which connecting part (9, Dufossez) is radially fixed by an upper (26) and lower (10) embracing connecting part.



Regarding claim 15, Daiguji in view of Willes and S-M disclose an end termination characterized in that the connecting parts comprise respective pin screws (shown in Daiguji Figure 2), for temporary fixation of the connecting parts to the connecting point and the receiving body respectively.

Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daiguji et al. (Daiguji – US 2001/0039686) in view of Willes (GB 2,091,770) and Shigley & Mischke (5<sup>th</sup> edition) as set forth in claims 1-5, 8-13, and 15 above, and further in view of Alznauer et al. (Alznauer – US 2002/0121390).

Regarding claims 6 and 7, Daiguji in view of Willes and S-M disclose an end termination as claimed but fails to disclose that each aperture through the receiving body terminates in a concentric recess for receipt of and to act as a guide and seat for the terminating sleeve, and that each recess has a depth that is longer than the distance that a terminating sleeve is able to move out of the receiving body.

Alznauer teaches the use of a bushing (11) that guides a cable (5) in an aperture (through which 11 passes) through a receiving body (1) and terminates in a concentric recess (the opening encompassed by 1) for receipt of and to act as a guide and seat for the terminating sleeve (11), and that each recess has a depth that is longer (the height of 1) than the distance that a terminating sleeve is able to move out of the receiving body. Alznauer teaches the use of this bushing to protect the cable. Accordingly it would have been obvious at the time of applicant's invention to modify the arrangement of Daiguji in view of Willes and S-M to include a bushing as taught by Alznauer for the purpose of protecting the cable.

***Allowable Subject Matter***

Regarding claim 14, the prior art does not disclose or suggest an upper and lower radially outer surface on the connecting part has an upward directed conical form and an upper and lower radially inner surface on the respective embracing connecting parts has complementary conical form. Thus, the claim would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Conclusion***


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Dupuy (US 4,295,250), Prevedini (US 4,442,646), Finsterwalder (US 4,594,827; US 4,473,915), Jungwirth et al. (US 4,633,540), Sunderland (US 1,577,003), Rovinsky (US 3,600,765), Matthes (US 1,863,021) are cited for pertaining to applicant's invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Mills whose telephone number is 571-272-8115. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on 571-272-7087. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
DJM  
9/16/2005



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